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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,736	10/29/2001	John M. Robertson	F-7561	1087

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EXAMINER	
COOKE, COLLEEN P	
ART UNIT	PAPER NUMBER
1754	

DATE MAILED: 10/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/074,736	ROBERTSON ET AL.	
	Examiner	Art Unit	
	Colleen P Cooke	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 September 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,8-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed 9/1/04 have been fully considered but they are not persuasive.

The applicant argues that the added claim language of heating the material and part to be joined "through direct contact between said contact area of said material and said contact area of said part" distinguishes over Bogard et al. because the induction heating of Bogard et al. occurs through the space between the induction coil and the contact areas. The claim language does not, however, require direct contact between the heat source and either or both workpieces. The claim language requires direct contact between the two parts to be joined; Bogard et al. meets this limitation (see Figure 7 where the workpieces 18 and 19 are in contact, and also Column 4, lines 38-41 where Bogard et al. teaches that the workpieces are pressed which requires them to be in contact).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Bogard et al. (5205465).

Bogard et al. teaches a method for repair of gas turbine engine rotor components which are wrought nickel-base superalloys or titanium alloys (Column 2, lines 24-27). Bogard et al.

also broadly teaches that to perform the repair, the replacement material is placed in an appropriate location to repair the defect by forge joining (Column 4, lines 11-13), and the components are heated and pressed (Column 4, lines 38-41) until a bond is achieved (Column 4, lines 46-47). Bogard et al. goes on to further teach, regarding the heating portion of the forge joining, that the components are heated by such means as an induction coil (38 in Figure 7) and also, as seen in claim 1 that the heating required is a local heating process (section e of patented claim 1). The applicant has provided no specific definition of the "direct" heating claimed in the process, yet as the induction heating taught by Bogard et al. provides focused heating energy on the specific part it is deemed to be direct heating.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bogard et al. (5205465) in view of Robertson et al. (5272809).

With respect to claims 8-9, 12-14, and 23, Bogard et al. teaches a method for repair of gas turbine engine rotor components which are wrought nickel-base superalloys or titanium alloys (Column 2, lines 24-27). Bogard et al. also broadly teaches that to perform the repair, the replacement material is placed in an appropriate location to repair the defect by forge joining (Column 4, lines 11-13), and the components are heated and pressed (Column 4, lines 38-41)

until a bond is achieved (Column 4, lines 46-47). Bogard et al. goes on to further teach, regarding the heating portion of the forge joining, that the components are heated by such means as an induction coil (38 in Figure 7) and also, as seen in claim 1 that the heating required is a local heating process (section e of patented claim 1). Bogard et al. does not teach using resistance heating for the forge joining process.

Robertson et al. teaches a forge joining repair process for gas turbine engine components, including those of the superalloy materials claimed (Column 4, lines 15-23). Robertson et al. further teaches in a specific example that resistance heating is used during the forge joining process (Column 7, lines 23-28). Resistance heating would inherently, by definition, require an electric current to run across the heated areas.

It would have been obvious to modify the forge joining repair process of Bogard et al. by using a resistance heating means as opposed to an induction heating means because Robertson et al. teaches the resistance heating means is used in a forge joining repair process successfully to achieve the same temperatures that Bogard et al. requires, as seen when comparing Column 5, lines 51-58 of Bogard et al. with Column 6, lines 52-55 of Roberston et al. which both detail the desired bonding temperatures for the claimed materials of wrought nickel-based superalloys or titanium alloys.

With respect to claims 10 and 11, Bogard et al. teaches machining to form a "contact area" to which the repair may be attached (Column 3, lines 61-65).

With respect to claims 15-16 and 18-20, Bogard et al. teaches a method for repair of gas turbine engine rotor components which are wrought nickel-base superalloys or titanium alloys

(Column 2, lines 24-27). Bogard et al. also broadly teaches that to perform the repair, the replacement material is placed in an appropriate location to repair the defect by forge joining (Column 4, lines 11-13), and the components are heated and pressed (Column 4, lines 38-41) until a bond is achieved (Column 4, lines 46-47). Bogard et al. goes on to further teach, regarding the heating portion of the forge joining, that the components are heated by such means as an induction coil (38 in Figure 7) and also, as seen in claim 1 that the heating required is a local heating process (section e). The applicant has provided no specific definition of the "direct" heating claimed in the process, yet as the induction heating taught by Bogard et al. provides focused heating energy on the specific part it is deemed to be direct heating. Bogard et al. does not teach that the repair process is specifically drawn to lugs or slots of a rotating disk or drum rotor.

Robertson et al. teaches a forge joining repair process for gas turbine engine components, including those of the superalloy materials claimed (Column 4, lines 15-23). Robertson et al. further teaches that the method is used to repair or replace lugs (Column 3, lines 3-9).

It would have been obvious to modify the forge joining repair process of Bogard et al. by applying it to lugs or a turbine engine in need of repair because Robertson et al. teaches that a forge joining repair process is used to successfully repair these components and Bogard et al. teaches a forge joining repair process for any variety of turbine engine components and is not restricted to the illustrative examples only (Column 3, lines 19-22).

With respect to claim 17, Bogard et al. teaches machining to form a "contact area" to which the repair may be attached (Column 3, lines 61-65).

With respect to claims 21-22, Bogard et al. teaches the forge joining repair process as described with respect to claim 1 above. Bogard et al. does not teach Bogard et al. does not teach using resistance heating for the forge joining process.

Robertson et al. teaches a forge joining repair process for gas turbine engine components, including those of the superalloy materials claimed (Column 4, lines 15-23). Robertson et al. further teaches in a specific example that resistance heating is used during the forge joining process (Column 7, lines 23-28). Resistance heating would inherently, by definition, require an electric current to run across the areas heated.

It would have been obvious to modify the forge joining repair process of Bogard et al. by using a resistance heating means as opposed to an induction heating means because Robertson et al. teaches the resistance heating means is used in a forge joining repair process successfully to achieve the same temperatures that Bogard et al. requires, as seen when comparing Column 5, lines 51-58 of Bogard et al. with Column 6, lines 52-55 of Roberston et al. which both detail the desired bonding temperatures for the claimed materials of wrought nickel-based superalloys or titanium alloys.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Colleen P Cooke whose telephone number is 571-272-1170. She can normally be reached Mon.-Thurs. 8am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, her supervisor, Stan Silverman can be reached at 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Colleen P. Cooke

Colleen P Cooke
Examiner
Art Unit 1754